

Packet Number: 081468-0306882

Client Reference: P-1741.000-US

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of

STREEFKERK et al.

Group Art Unit: 2851

Application No.: 10/719,683

Examiner:

Filed: November 24, 2003

Confirmation No.: 1907

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
D.R.	DIERICHS (081468-0308270)	10/775,326	02/11/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
D.R.	DUINEVELD et al. (081468-0308101)	10/773,461	02/09/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
D.R.	FLAGELLO et al. (081468-0302644)	10/698,012	10/31/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
D.R.	SUWA et al. (Reissue Application of U.S. Patent No. 6,191,429 B1)	10/367,910	02/19/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Other: stamped receipt card

\*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.

It is respectfully requested that these applications and the art cited therein during examination be expressly considered during the prosecution of this application and be made of record in this application. The identification of the above U.S. patent applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent.

**PLEASE DO NOT PRINT** the above information on the patent which results from this application.

FORM PTO-1449 (modified)  
To: U.S. Department of Commerce  
(PW FORM PAT-1449)  
Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	306882	P-1741.000-US

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: STREEFKERK et al.	
Appln. No.: 10/719,683	
Filing Date: November 12, 2003	
Examiner:	Group Art Unit: 2851

Date: June 14, 2004

Page 1 of 1

**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
D.R.	AR 2004/0075895 A1	04/2004	LIN	-	-	
D.R.	BR 2004/0109237 A1	06/2004	EPPLÉ et al.	-	-	
	CR					
	DR					
	ER					
	FR					
	GR					
	HR					

**FOREIGN PATENT DOCUMENTS**

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
D.R.	IR JP 07-132262	05/1995	JAPAN	HIRAKAWA et al.	X			
	JR JP 58-202448	11/1983	JAPAN	KAWAMURA et al.	X			
	KR WO2004/019128	03/2004	PCT	OMURA et al.				
	LR WO 03/077037	09/2003	PCT	ROSTALSKI				
	MR WO 03/077036	09/2003	PCT	SCHUSTER	X			
	NR DD 206 607	02/1984	GERMANY	WESTPHAL et al.		X		
D.R.	OR DD 221 563	04/1985	GERMANY	PFORR et al.		X		
	PR							
	QR							

**OTHER (Including in this order: Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

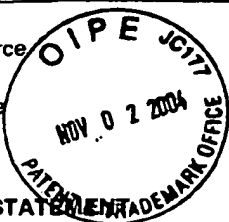
D.R.	RR	S. OWA et al., "Update on 193nm immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51			
	SR	H. HATA, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22			
	TR	T. MATSUYAMA et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004			
	UR	"Depth-of-Focus Enhancement Using High Refractive Index Layer on the Imaging Layer", IBM Technical Disclosure Bulletin, Vol. 27, No. 11, April 1985, p. 6521			
	VR	A. SUZUKI, "Lithography Advances on Multiple Fronts", EEdesign, EE Times, January 5, 2004			
D.R.	WR	B. LIN, "The $k_2$ coefficient in nonparaxial $\lambda/NA$ scaling equations for resolution, depth of focus, and immersion lithography, <i>J. Microlith., Microfab., Microsyst.</i> 1(1):7-12 (2002)			
	XR				
	YR				
	ZR				

Examiner: *Butt* Date Considered: 4/14/05

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Best Available Copy

FORM PTO-1449 (modified)  
To: U.S. Department of Commerce  
(PW FORM PAT-1449)  
Patent and Trademark Office



Atty.  
Dkt. No.

M#

Client Ref.

306882

P-1741.000-US

Applicant: STREEFKERK et al.

Appln. No. 10/719,683

Filing Date: November 24, 2003

Examiner: Unknown

Group Art Unit: 2851

INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT

Date: November 2, 2004

Page 1 of 1

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
D.R.	AR 6,236,634 B1	05/2001	LEE et al.	-	-	
	BR 2002/0020821 A1	02/2002	VAN SANTEN et al.	-	-	
	CR 4,390,273	06/1983	LOEBACH et al.	-	-	
	DR 2004/0119954	06/2004	KAWASHIMA et al.	-	-	
	ER 2004/0125351	07/2004	KRAUTSCHIK et al.	-	-	
	FR 6,417,974 B1	07/2002	SCHUSTER	-	-	
	GR 5,436,766	07/1995	LEARY	-	-	
D.R.	HR 5,754,893	05/1998	NOMURA et al.	-	-	

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclosed	No
D.R.	IR JP 11-176727	07/1999	JAPAN	SHIRAISHI	X			
	JR JP 2000-058436	02/2000	JAPAN	FUJISHIMA et al.	X			
	KR WO 2004/053950 A1	06/2004	PCT	OWA	X			
	LR WO 2004/053951 A1	06/2004	PCT	MAGOME et al.	X			
	MR WO 2004/053952 A1	06/2004	PCT	MAGOME et al.	X			
	NR WO 2004/053953 A1	06/2004	PCT	NEI et al.	X			
	OR WO 2004/053954 A1	06/2004	PCT	NEI et al.	X			
	PR WO 2004/053955 A1	06/2004	PCT	HIRUKAWA et al.	X			
	QR WO 2004/053956 A1	06/2004	PCT	NAGASAKA et al.	X			
	RR WO 2004/053957 A1	06/2004	PCT	HIDAKA et al.	X			
	SR WO 2004/053958 A1	06/2004	PCT	MIZUTANI et al.	X			
	TR WO 2004/053959 A1	06/2004	PCT	SHIRAI	X			
	UR WO 2004/053956 A2	06/2004	PCT	GRAUPNER	X			
	VR WO 2004/055803 A1	07/2004	PCT	VAN SANTEN	X		X	
	WR WO 2004/057589 A1	07/2004	PCT	NEIJZEN et al.	X		X	
D.R.	XR WO 2004/057590 A1	07/2004	PCT	VAN SANTEN et al.	X		X	
D.I.	YR JP 2004-193252	07/2004	Japan	Not Available	X			
	ZR							

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

AAR			
BBR			
CCR			

Examiner *B. J. [Signature]*

Date Considered: 4/14/05

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Best Available Copy

FORM PTO-1449 (modified)  
To: U.S. Department of Commerce  
(PW FORM PAT-1449)  
Patent and Trademark Office

Atty. Dkt. No.	M#	Client Ref.
	306882	P-1741.000-US

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant:	Bob STREEFKERK <i>et al.</i>
Appln. No.:	<del>TO BE ASSIGNED</del> 10/719683
Filing Date:	November 24, 2003
Examiner:	Unknown
Group Art Unit:	Unknown

Date: November 24, 2003 Page 1 of 3

**U.S. PATENT DOCUMENTS**

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
D.R.	AR	3,573,975	04/1971	Dhaka <i>et al.</i>	117	212	
	BR	3,648,587	03/1972	Stevens	95	44	
	CR	4,346,164	08/1982	Tabarelli <i>et al.</i>	430	311	
	DR	4,396,705	08/1983	Akeyama <i>et al.</i>	430	326	
	ER	4,480,910	11/1984	Takanashi <i>et al.</i>	355	30	
	FR	4,509,852	04/1985	Tabarelli <i>et al.</i>	355	30	
	GR	4,983,251	01/1991	Haisma <i>et al.</i>	156	630	
	HR	5,054,683	10/1991	Haisma <i>et al.</i>	228	198	
	IR	5,040,020	08/1991	Rauschenbach <i>et al.</i>	355	53	
	JR	5,121,256	06/1992	Corle <i>et al.</i>	359	664	
	KR	5,610,683	03/1997	Takahashi	355	53	
	LR	5,715,039	02/1998	Fukuda <i>et al.</i>	355	53	
	MR	5,825,043	10/1998	Suwa	250	548	
D.R.	NR	5,900,354	05/1999	Batchelder	430	395	

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclose	No
D.R.	OR	WO 99/49504	09/1999	PCT	Fukami <i>et al.</i>	X		X	
	PR	EP 0023231	02/1981	Europe	Tabarelli <i>et al.</i>	X			
	QR	EP 0418427	03/1991	Europe	Miyake	X		X	
	RR	EP 1039511	09/2000	Europe	Murakimi <i>et al.</i>	X		X	
	SR	DD 224448	07/1985	German	Hesse <i>et al.</i>		X		
	TR	DD 242880	02/1987	German	Kuch		X		
	UR	FR 2474708	07/1981	France	Letellier		X		
	VR	JP 62-065326	03/1987	Japan	Moriuchi	X			
	WR	JP 62-121417	06/1987	Japan	Nakazawa	X			
D.R.	XR	JP 63-157419	06/1988	Japan	Nakasuji	X			

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

D.R.	YR	EP Search Report for EP 02257938 dated September 25, 2003			
	ZR	M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001			
	AAR	M. Switkes <i>et al.</i> , "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356			
D.R.	BBR	M. Switkes <i>et al.</i> , "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002			

Examiner *[Signature]* Date Considered: 4/14/05

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 (modified)  
To: U.S. Department of Commerce  
(PW FORM PAT-1449)  
Patent and Trademark Office

Atty.  
Dkt. No.

M#

Client Ref.

306882

P-1741.000-US

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: Bob STREEFKERK *et al.*

Appl. No.: ~~TO BE ASSIGNED~~ 10/719683

Filing Date: November 24, 2003

Date: November 24, 2003

Page

2

of

3

Examiner: Unknown

Group Art Unit: Unknown

**U.S. PATENT DOCUMENTS**

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
DR	CCR	6,190,778	02/2001	Batz-Sohn <i>et al.</i>	428	448	
	DDR	6,191,429	02/2001	Suwa	250	548	
	EER	6,560,032	05/2003	Hatano	359	656	
	FFR	6,603,130	08/2003	Bisschops <i>et al.</i>	250	492.1	
	GGR	6,633,365	10/2003	Suenaga	355	53	
	HHR	2002/0163629	11/2002	Switkes <i>et al.</i>	355	53	
Y	IIR	2003/0123040	07/2003	Almogly	355	69	
DR	JJR	2003/0174408	09/2003	Rostalski <i>et al.</i>	359	642	
	KKR						
	LLR						
	MMR						
	NNR						
	CCR						
	PPR						
	QQR						

**FOREIGN PATENT DOCUMENTS**

		Document Number	Date MM/YYYY	Country	Inventor Name		English Abstract		Translation Readily Available	
							Enclosed	No	Enclose	No
DR	RRR	JP 04-305915	10/1992	Japan	Ozeki <i>et al.</i>		X			
	SSR	JP 04-305917	10/1992	Japan	Ozeki <i>et al.</i>		X			
	TTR	JP 06-124873	05/1994	Japan	Takahashi		X		X	
	UUR	JP 07-220990	08/1995	Japan	Fukuda <i>et al.</i>		X			
	VVR	JP 10-228661	08/1998	Japan	Kurokawa		X			
	WWR	JP 10-255319	09/1998	Japan	Suenaga <i>et al.</i>		X			
	XXR	JP 10-303114	11/1998	Japan	Suwa		X		X	
Y	YYR	JP 10-340846	12/1998	Japan	Kudo		X		X	
DR	ZZR	JP 2001-091849	04/2001	Japan	Aizaki <i>et al.</i>		X			
	AAAR									

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

DR	BBBR	B.J. Lin, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002			
DR	CCCF	B.J. Lin, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997			

Examiner

Date Considered:

4/14/05

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Atty.  
Dkt. No.

M#

Client Ref.

305882

P-1741-000-US

**INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT**

Applicant: Bob STREEFKERK *et al.*

Appln. No.: TO BE ASSIGNED

Filing Date: November 24, 2003

Date: November 24, 2003

Page

3

of

3

Examiner: Unknown

Group Art Unit: Unknown

**U.S. PATENT DOCUMENTS**

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
	DDD					
	EEE					
	FFF					

**FOREIGN PATENT DOCUMENTS**

Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract	Translation Readily Available
				Enclosed	No
	GGG				
	HHH				

**OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)**

D.R.	IIIR	B.J. Lin, "The Paths To Subhalf-Micrometer Optical Lithography", SPIE Vol. 922, Optical/Laser Microlithography (1988), pp. 256-269			
	JJJR	G.W.W. Stevens, "Reduction of Waste Resulting from Mask Defects", Solid State Technology, August 1978, Vol.21 008, pp. 68-72			
	KKK	S. Owa et al., "Immersion Lithography; its potential performance and issues", SPIE Microlithography 2003, 5040-186, February 27, 2003			
	LLL	S. Owa et al., "Advantage and Feasibility of Immersion Lithography", Proc. SPIE 5040 (2003)			
	MMM	Nikon Precision Europe GmbH, "Investor Relations - Nikon's Real Solutions", May 15, 2003			
	NNN	H. Kawata et al., "Optical Projection Lithography using Lenses with Numerical Apertures Greater than Unity", Microelectronic Engineering 9 (1989), pp. 31-36			
	OOO	J.A. Hoffnagle et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309			
	PPP	B.W. Smith et al., "Immersion Optical Lithography at 193nm", FUTURE FAB International, Vol. 15, July 11, 2003			
	QQQ	H. Kawata et al., "Fabrication of 0.2µm Fine Patterns Using Optical Projection Lithography with an Oil Immersion Lens", Jpn. J. Appl. Phys. Vol. 31 (1992), pp. 4174-4177			
D.R.	RRR	G. Owen et al., "1/8µm Optical Lithography", J. Vac. Sci. Technol. B., Vol. 10, No. 6, November/December 1992, pp. 3032-3036			
	SSS				
	TTT				
	UUU				
	VVV				
	WWW				
	XXX				
	YYY				
	ZZZ				

Examiner *[Signature]*

Date Considered: 4/14/05

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.